

WHAT IS CLAIMED IS:

1. A method for producing an antifuse on a substrate, comprising:
forming a first interconnect on the substrate, the first interconnect having a first planar end face substantially perpendicular with respect to an upper surface of the substrate;
depositing a dielectric layer at the planar end face of the first interconnect;
and
forming a second interconnect, the second interconnect having a second planar end face substantially perpendicular with respect to the upper surface of the substrate and disposed in facing relation to the first planar end face so that the dielectric layer is interposed between the first planar end face and the second planar end face.
2. The method of claim 1, wherein depositing the dielectric layer comprises isotropically depositing the dielectric layer, so that edges of the first interconnect are covered.
3. The method of claim 1, wherein depositing the dielectric layer comprises anisotropically depositing the dielectric layer at an oblique angle relative to the upper surface of the substrate.
4. The method of claim 1, wherein a portion of the dielectric is disposed between the substrate and the second interconnect.
5. The method of claim 1, wherein respective upper surfaces of the first interconnect, the second interconnect and the dielectric layer form a common planar surface.

6. The method of claim 5, wherein the common planar surface is coplanar with the upper surface of the substrate.
7. A method for producing an antifuse on a substrate, comprising:
 - forming a trench in the substrate; wherein the trench has a central axis substantially parallel to the upper surface of the substrate;
 - forming a first interconnect in a first portion of the trench, the first interconnect having a first planar end face;
 - depositing a dielectric layer in a second portion of the trench at the planar end face of the first interconnect;
 - forming a second interconnect in a third portion of the trench, the second interconnect having a second planar end face substantially perpendicular with respect to the upper surface of the substrate and disposed in facing relation to the first planar end face so that the dielectric layer is interposed between the first planar end face and the second planar end face.
8. The method of claim 7, wherein depositing the dielectric layer comprises isotropically depositing the dielectric layer, so that edges of the first interconnect are covered.
9. The method of claim 7, wherein forming the first interconnect comprises:
 - depositing a sacrificial material into the first, second and third portions of the trench; and
 - depositing a conductive material over the sacrificial material in the first, second and third portions of the trench;
 - removing a portion of the conductive material to form the first interconnect in the trench.

10. The method of claim 7, wherein the dielectric is deposited in the second and third portion of the trench and not the first portion of the trench.

11. The method of claim 7, wherein depositing the dielectric layer comprises isotropically depositing the dielectric layer, so that edges of the first interconnect are covered.

12. The method of claim 7, wherein depositing the dielectric layer comprises anisotropically depositing the dielectric layer at an oblique angle relative to the upper surface of the substrate.

13. The method of claim 7, wherein respective upper surfaces of the first interconnect, the second interconnect and the dielectric layer form a common planar surface.

14. The method of claim 13, wherein the common planar surface is coplanar with the upper surface of the substrate.

15. An antifuse structure in a substrate, comprising:
a first interconnect defining a first planar end face;
a second interconnect defining a second planar end face; and
a dielectric layer disposed between the first and second planar end faces and having a substantially vertical orientation with respect to a substantially horizontal upper surface of the substrate.

16. The antifuse structure of claim 15, wherein respective upper surfaces of the first interconnect, the second interconnect and the dielectric layer form a common plane coplanar with the horizontal upper surface of the substrate.

17. The antifuse structure of claim 15, wherein at least one of the planar end faces is oblique with respect to the horizontal upper surface of the substrate.

18. The antifuse structure of claim 15, wherein the first interconnect is shorter than the second interconnect.

19. An antifuse structure in a substrate, comprising:

a first interconnect defining a first planar end face and disposed in a trench formed in the substrate;

a second interconnect defining a second planar end face and disposed in the trench; and

a dielectric layer disposed in the trench and between the first and second planar end faces and having a substantially vertical orientation with respect to a substantially horizontal upper surface of the substrate.

20. The antifuse structure of claim 19, wherein respective upper surfaces of the first interconnect, the second interconnect and the dielectric layer form a common plane coplanar with the horizontal upper surface of the substrate.

21. The antifuse structure of claim 19, wherein at least one of the planar end faces is oblique with respect to the horizontal upper surface of the substrate.

22. The antifuse structure of claim 19, wherein the first interconnect is shorter than the second interconnect.

23. The antifuse structure of claim 19, wherein the dielectric layer is made of a dielectric material a portion of which is disposed between the second interconnect and the substrate.